CONCORDIA UNIVERSITY

Graduate Studies News

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From the Dean's Desk

Electronic Mail — A Global System for Information Exchange

With the creation of "electronic mail" networks connecting many major universities around the world, graduate studies and research have taken on a new global dimension. Concordia University has recently joined **NetNorth**, a Canadian communications network which allows electronic data interchange with **BITNET** (NetNorth's American counterpart) and the rest of the world. Since the University Computer Centre is currently perfecting its local and global networking capabilities, it is worthwhile to look at the potential benefits of an electronic mail system to graduate studies and research.

The basic unit of information is a "file" which can be moved between personal and university computers in a fast and flexible way in essentially four directions: (1) Person-to-Person; (2) Person-to-University; (3) University-to-Person; and (4) University-to-University. Direction (1) usually takes the familiar form of inter-office memoranda. Direction (2) is analogous to sending copies of a memorandum to university members on a designated list. Direction (3) is the electronic counterpart of a notice board in which certain items of public information can be gleaned by all members of the community. Direction (4) requires electronic links between universities known as networks with varying formats and protocols. One of the main difficulties in using electronic mail effectively between different computer systems is the lack of uniformity in the way information is stored and processed. However, electronic communication is one of the most active and promising fields of current research in computer science.

Many novices feel intimidated by this new technology, especially if they must add to and remember yet another piece of personal data in addition to their driver's licence, social insurance, credit card, personal banking machine numbers, etc. Compared to many other aspects of communication with computers, this addition to our numerical personality is rather innocuous. At Concordia, the system is based on individual electronic addresses of the form . . .@CONU1. NETNORTH, where "..." is a variant of the actual name of the participant. In order to be able to obtain an electronic address, an account on the University computer must be opened in order to be able to send and receive files on a personal computer via the University mainframe. The popular communication between personal computers via modems and the public telephone system is a much more specialized and limited form of electronic communication and is not a form of mail in the present sense.

A "file" can be any document of almost any length. Thus we can mail personal or business letters, reports, preprints, examination results, theses, manuscripts of all kinds, ideas, conjectures, experimental data, statistical information, student records, transcripts, letters of reference, letters of admission, referee reports, etc. — in any of the four directions indicated above. Eventually we will be able to mail facsimiles of official documents. The opportunities for the creative exchange of information via this medium is mind boggling as is the prospect of the inevitable accompanying electronic junk mail.

We can of course send our mail to several addresses at once by preparing permanent mailing lists consisting of all our co-workers around the world. It is this latter feature of electronic mail that has already

revolutionized the style and method of research in several fields of study. For example, if different researchers are working on the same topic, they can mail their ideas, questions, conjectures, preliminary results, biographical references, and other pertinent data by means of a few key strokes to all interested colleagues for their reaction, comments, and consideration. The proverbial ivory tower is thus becoming a personal computer haven that puts a dramatically new face on academic collaboration. Researchers in theoretical Computer Science seem to be leading the way in using the full power of electronic mail to advance knowledge. Workers in several other fields are not far behind. One of the really exciting aspects of this new development is the fact that fewer active researchers are less isolated from the mainstream of their disciplines and from the frontiers of research because of the remote location or the inadequate facilities of their universities.

Electronic mail also has enormous administrative and informational potential. Universities can create bulletin boards, i.e., lists of files on mainframe computers, which can be accessed by members of the community. The items in these lists can range from deadlines, procedure, regulations, calendar extracts, announcements, inventories, — to instructions on registration and course changes. Ultimately this new technology will lead to the "electronification" of the registration and course change processes themselves. Several universities already have such a system known as "telephone registration". It is rather bizarre and gratifying to think that the anonymity of personal computers and telephone networks will contribute to the humanization of a necessary but usually frustrating, depressing, and often impersonal aspect of student life.

M. E. Sachs

The Ph.D. in Humanities

For the fashion conscious, there is no comparison between clothes off the rack and those made-to-measure. As for free thinkers, there is no comparison between pre-structured academic programs and those custom-fit to personal intellectual goals.

In this way the Ph.D. in Humanities at Concordia University is the haute couture of the academic world in which students design their own interdisciplinary programs.

It is the only doctoral program of its kind in Canada, and the only restrictions it places on students are that their studies must be interdisciplinary and that they be within the confines of the Humanities. The 90-credit program is comprised of a number of interrelated subjects, with one discipline as a central focus.

In order to be accepted, students must have a master's degree and the program must be able to organize an appropriate advisory committee which has the expertise in each of the disciplines of a student's proposed program.

The student must choose one main focus for study. One of the student's three faculty advisors will be responsible for his or her progress in the program, and the others are there to help with any problems that a student may encounter.

There is no faculty per se assigned to the program and the advisory committees may be drawn from any of the departments within the Arts and Science and Fine Arts Faculties. Professors accept the added responsibility voluntarily and rarely refuse a request to join an advisory committee. Says Dr. Joyce Barakett, the director of the program: "The whole thing is based on goodwill."

A student's program, however, must be designed with a central theme that addresses a selected research problem, and if an appropriate committee cannot be formed, a student may be denied entry.

The program is flexible enough, Barakett adds, to allow students to suggest professors from other universities if a full committee cannot be drawn from faculty at Concordia.

The work-load is made up of four six-credit courses of directed study (which take place in the form of tutorials), 12 credits drawn from oral and written comprehensive exams in all three disciplines of a student's program, and a 54-credit research thesis.

"The program requires a tremendous amount of responsibility on the part of the students," says Barakett, referring to the fact that students are pretty much on their own in these personalized areas of study. No two programs are alike.

They cover a broad range of topics, which such thesis titles as: *Women in War*, taken from a sociological perspective, with history and political science as secondary disciplines; and *National Economic Management and the Media*, with a major emphasis on political science, and minor emphasis on management and communications.

A departmental document describes the aims of the program as follows: "Interdisciplinary training in the social sciences and humanities is often sought by students dissatisfied with the over-specialization of many doctoral programs. They are directed by a broader, more humanistic vision of the contribution of education to individual, societal and cultural development. The training which this program provides aims to foster the development of ideas and approaches which are at once critical and creative in both educational and cultural terms."

"The students come to us already interested in interdisciplinary studies," says Barakett, "and most go into teaching or research once they complete their studies at Concordia. Those who enter the program already have a strong inclination toward an academic career."

Most attend on a part-time basis and are from the Montreal area. Enrolment in the program has been rising steadily in the past five years, from a total of 12 students in 1981/82, to 30 students today.

As Barakett points out, the program can never become very large due to the fact that unrestrained growth would likely cause the program to put a stress on available resources.

The Ph.D. in Humanities was started in 1972 as an experimental program and received official recognition in 1984 from the Quebec government. Student research projects have been recognized to the extent that some are funded by grants from the provincial and federal governments. This is particularly noteworthy given the number of part-time students in the program.

Says Barakett: "The program presents an opportunity for students who don't want to function in the traditional academic network."

A recently-completed consultant's report on the Ph.D. in Humanities lauds the uniqueness of the program, the high quality of theses produced, and the quality and commitment of faculty who have been involved as tutors, directors and advisors. The report adds that the program has the potential to be nationally recognized because of its flexibility and the fact that using outside professors promotes links with outside universities.

"It is one program that ought to be given priority, bearing in mind Concordia's current goal of expanding graduate programs," says Joyce Barakett

Those interested in the Ph.D. in Humanities can write Dr. Joyce Barakett at 1455 de Maisonneuve Boulevard West, Room AD 302, Montreal, Quebec, H3G 1M8, Canada. Or call (514) **848-2096.**

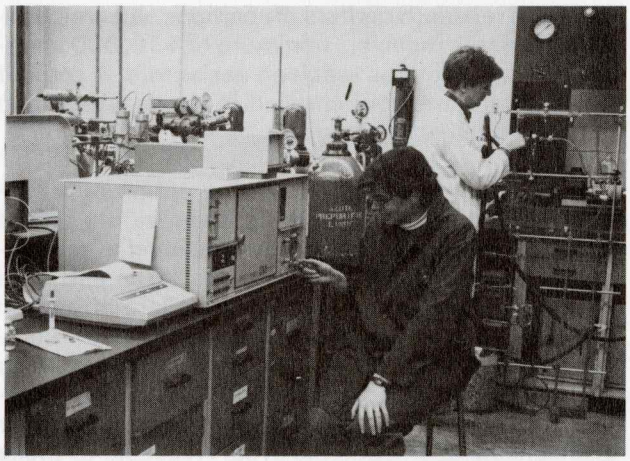
Graduate Programs in Chemistry

How short is a picosecond? Well, in the time it has taken you to read this far, hundreds of millions of them have already passed by. A picosecond is one trillionth of a second. They really whiz by, unnoticed by those of us who think in terms of minutes, hours and days. Scientists at the Canadian Centre of Picosecond Flash Photolysis, the only facility of its kind in Canada, pay very close attention to these trillionths of a second. Their research into the chemical reactions that occur in one picosecond could have a dramatic impact on our lives.

The scientists in this laboratory, located at Concordia, are studying how molecules react to light. When subjected to a pulse of light from a laser, molecules become excited, and it is the split-second reaction that is the focus of research interest.

There once was great hope that sunlight could be used to separate water into its component gases of hydrogen and oxygen. The hydrogen — difficult to obtain naturally because it prefers to shack up in a *ménage à trois* with oxygen than do it alone — could then be used as a plentiful and non-polluting fuel source. While that notion doesn't hold quite the promise it once did, scientists are now looking at other possibilities, such as the use of light to break down cancer-causing PCBs.

The Picosecond laboratory is only one of several facilities located at Concordia which help provide faculty and students of the Chemistry Department



Graduate students: (front) Louise Dufresne and (back) Pierre Levesque working in Catalysis Laboratory

with access to the most modern technology. At another laboratory, used for conducting catalysis trials, a research project is under way to study how zeolites can convert wood alcohol into gasoline and other petro-chemical compounds. The zeolites — synthetic porous solids that can be made from a variety of substances (including asbestos), which can perform a variety of functions — are also being studied for their potential use as soil conditioners. Tests are now being conducted to determine whether zeolites can be used to combat drought. This would work if, once added to soil, they slowly release water during times of low rainfall.

Says Dr. Robin Rye, Program Director of Graduate Studies in Chemistry at Concordia: "Being involved with these research centers gives students access to state-of-the-art instrumentation for studies in these areas." Other such facilities include the Regional Center for Inorganic Materials and the Science Industrial Research Unit.

Access to this equipment, vital to faculty and students attempting up-to-date research projects, is not always easy to come by. A recent study showed that it would cost $27 million to properly update the scientific equipment currently being used in academic institutions across Quebec. Researchers at Concordia are likely better equipped than most in the province.

While the graduate calendar defines research in the chemistry department as falling within the traditional groupings of analytical, inorganic and organic chemistry, as well as biochemistry, both Dr. Robin Rye and Departmental Chairman Peter Bird explain that these demarcations are becoming blurred as various areas of scientific inquiry now tend to overlap.

The program receives a substantial amount of research funding from the provincial and federal governments, and also benefits from funding awarded to the research centers on-campus. As well, full-time students receive a minimum of $10,000 annually for their work as teaching assistants. A total of 44 students are now enrolled in the master's and doctoral chemistry programs.

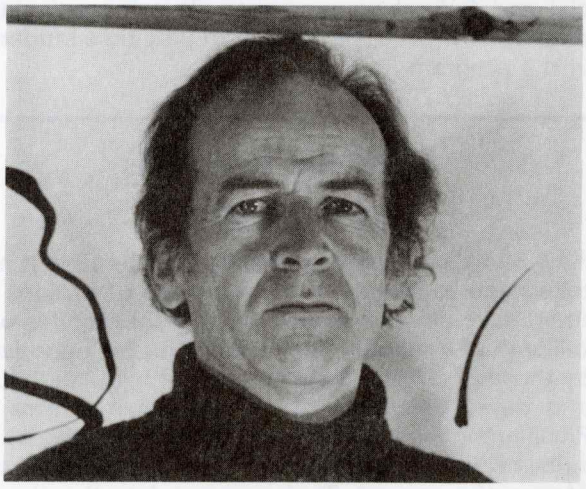
While master's students have the option of studying on a full- or part-time basis, the majority attend full-time, for, as Dr. Rye says, "the level of motivation must be very high for students in the part-time stream." While courses are given in late afternoon and early evening in order to accommodate working students, the work load is quite heavy. The department does, however, offer a unique alternative for those who would prefer to combine their professional and academic lives. Available to those pursuing an M.Sc. in Chemistry, the CO-OP Program allows working students to conduct research of interest to their employers, in their employers' laboratories. The project must, of course, be directed toward a thesis topic acceptable to the department, and be conducted under the guidance of an academic supervisor in the department. Students must also take courses while doing their research and must also be prepared to spend an academic term of full-time study on campus.

The 90-credit Ph.D. is so demanding that students are usually expected to register on a full-time basis. master's students who have completed a full year's study at Concordia, and have excelled in their course work and research can proceed directly to the Ph.D. program without submitting a Master's thesis. As Dr. Rye says, "Why do the same thing twice?" Students who follow this route remain under the supervision of the same academic advisor.

Most students are from the Montreal area, although, "We could fill every available position with international students," says Dr. Rye considering the high number of applications from overseas. There are currently 11 international students in the program and this year the department will see its first graduates from the People's Republic of China.

For those who would like further information on these graduate programs in Chemistry can contact Dr. Robin Rye at (514) **848-3344** or write care of Concordia University at 1455 de Maisonneuve Boulevard West, Montreal, Quebec, H3G 1M8, Canada.

Graduate Profile: Claude Blin, Ph.D.



Claude Blin was the first student to receive his doctorate in Art Education and Art Therapy from Concordia in 1985. Concordia University is the only university in Canada to offer a Ph.D. in this discipline. Claude's thesis was entitled: *L'Expérience du Peintre Henri Michaux, essai herméneutique.*

Dr. Blin, originally from France, has been residing and working in Quebec since 1966. In 1969 he began teaching "d'arts plastiques" at Collège d'Enseignement général et professionnel du Vieux-Montréal and is currently co-ordinator of their art department.

As well as being an art educator, Claude Blin is a nationally recognized painter with an impressive list of showings.

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